M.L. 2015, Chp. 76, Sec. 2, Subd. 3b**,** as extended by laws M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 20
For the Period Ending June 30, 2019

PROJECT TITLE: County Geologic Atlases – Part B
PROJECT MANAGER: Jim Berg
AFFILIATION: Minnesota Department of Natural Resources
MAILING ADDRESS: Ecological and Water Resources Division, Box 25, 500 Lafayette Rd N
CITY/STATE/ZIP: St. Paul, MN 55155
PHONE: (651) 259-5680
E-MAIL: jim.a.berg@state.mn.us
WEBSITE: www.mndnr.gov

FUNDING SOURCE: Environment and Natural Resources Trust Fund
LEGAL CITATION: M.L. 2015, Chp. 76, Sec. 2, Subd. 3b**,** as extended by laws M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 20

APPROPRIATION AMOUNT: $2,000,000
AMOUNT SPENT: $2,000,000
AMOUNT REMAINING: $0

Sound bite of Project Outcomes and Results

A geologic atlas provides essential information for management of Minnesota's groundwater by identifying key areas to protect and ensure sustainable use. Accomplishments include completions of: Anoka (2016), Nicollet (2016), Sibley (2017), Renville (2017), Sherburne (2017), Clay (2018), Wright (2018), and Washington (2019), and progress toward completion of 15 other atlases.

Overall Project Outcome and Results

County groundwater atlases (County Geologic Atlas, Part B) provide information about groundwater to help citizens and organizations improve sustainable management of groundwater resources. Delineated and mapped aquifers, recharge areas, and springsheds are essential information to help guide management decisions.

The county groundwater atlases describe the hydrogeologic setting, water levels, chemistry, pollution sensitivity, and groundwater use in a county. It includes selected hydrogeologic cross sections indicating groundwater flow direction, residence time within aquifers and groundwater-surface water interactions.

Completed county groundwater atlases that were partially funded by this funding include the counties listed below. Some key conclusions include:

Anoka and Sherburne, and Washington counties
The surficial and upper two to four buried sand aquifers (Anoka; Sherburne and Washington, respectively) are relatively sensitive to pollution. The lower buried sand aquifers and the top of bedrock (Anoka and Sherburne) have large areas that generally appear to be well protected. Elevated chloride and nitrate concentrations in groundwater were found throughout these counties. Elevated concentrations of naturally occurring manganese were detected in more than half of the samples in Anoka and Sherburne.

Nicollet, Sibley, Renville, Wright, and Clay counties
The pollution sensitivity ratings of the surficial and upper one to three buried sand aquifers (Nicollet, Sibley, and Renville; Wright and Clay, respectively) are relatively sensitive to pollution. The deeper aquifers have mostly lower pollution sensitivity ratings across the interior of the counties with higher

sensitivity ratings in the Minnesota and Mississippi river valleys. Arsenic and manganese are naturally occurring elements of concern that are present in groundwater across these counties.

In Clay County, chemical analysis of groundwater samples indicates groundwater from buried aquifers in the western portion is some of the oldest and most isolated in the state. In Wright and Washington counties, chemical and other evidence shows lake and groundwater connections are common. Future atlases partially funded by this project include: Becker, Brown, Cass, Dodge, Hennepin, Houston, Hubbard, Isanti, Kanabec, Meeker, Morrison, Olmsted, Redwood, Wadena, and Winona counties.

Project Results Use and Dissemination

We created and presented educational workshops for all of the groundwater atlases that were completed during this funding period. Shorter presentations were also provided to the County Board of Commissioners for most of the completed Part B counties. Short presentations about the DNR part of the atlas program were made to county and other local staff during the completed Part A presentations. Other atlas related presentations included the Benton & Mille Lacs County SWCD, MPCA and non-atlas DNR staff, the Legislative Water Commission, and a state conference of township supervisors.

Technical articles for the Minnesota Groundwater Association (MGWA) for the completed atlases were published in issues of the MGWA newsletter (http://www.mgwa.org/news_letter/newsletter-back-issues/). Public notification of these completions was also provided to over 3000 subscribers through GovDelivery. Paper copies were sent out to the LCCMR Legislative Reference Library. Copies of the atlas are mailed to other interested stakeholders including USGS, local libraries, and state agencies.

Environment and Natural Resources Trust Fund (ENRTF)
M.L. 2015 Work Plan Final Report

Date of Report: July 17, 2019

Final Report:

Date of Work Plan Approval: June 25, 2015

Project Completion Date: June 30, 2019

PROJECT TITLE: County Geologic Atlases – Part B

Project Manager: Jim Berg

Organization: Minnesota Department of Natural Resources

Mailing Address: Ecological and Water Resources Division, Box 25, 500 Lafayette Rd N

City/State/Zip Code: St. Paul, MN 55155

Telephone Number: (651) 259-5680

Email Address: jim.a.berg@state.mn.us

Web Address: www.mndnr.gov

Location: Counties of: Anoka, Becker, Brown, Cass, **Clay**, Dodge, Hennepin, Houston, Hubbard, Isanti, Kanabec Meeker, Morrison, **Nicollet**, Olmsted, Redwood, **Renville, Sherburne, Sibley**, Wadena, **Washington**, Winona, and **Wright**.

Total ENRTF Project Budget:		
	ENRTF Appropriation:	**$2,000,000**
	Amount Spent:	**$2,000,000**
	Balance:	**$0**

Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 3b**,** as extended by laws M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 20

Appropriation Language:
$2,000,000 the first year is from the trust fund to the commissioner of natural resources to continue the acceleration of the production of county geologic atlases for the purpose of sustainable management of surface water and groundwater resources. This appropriation is to complete Part B of county geologic atlases which focuses on the properties and distribution of subsurface water found within geologic formations mapped in Part A in order to characterize the potential yield of aquifers and their sensitivity to contamination. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.
Carryforward; Extension (a) The availability of the appropriations for the following projects are extended to June 30, 2019: (3) Laws 2015, chapter 76, section 2, subdivision 3, paragraph (b), County Geologic Atlases - Part B.

I. PROJECT TITLE: County Geologic Atlases – Part B

II. PROJECT STATEMENT: A geologic atlas provides information that is essential to sustainable management of Minnesota's groundwater resources by identifying key areas to protect our drinking water and ensure sustainable use. Atlases define aquifer boundaries and identify the interconnection of aquifers to other aquifers, to the land surface, and to surface water resources. Delineation and mapping of aquifers, recharge areas, flow systems, and discharge areas are essential first steps to inform management decisions that will protect water supplies, public health, and the resource. This project will complete, continue, or initiate projects planned under previous funding, including: **Anoka**, Becker, Brown, Cass, **Clay**, Dodge, Hennepin, Houston, Hubbard, Isanti, Kanabec Meeker, Morrison, **Nicollet**, Olmsted, Redwood, **Renville, Sherburne, Sibley**, Wadena, **Washington**, Winona, and **Wright**.

Each atlas project includes some or all of the following work components: assembly of data layers and development of conceptual hydrogeologic models; development of maps of the water table; development of maps of aquifers; groundwater sample collection and laboratory analysis; analysis and interpretation of chemistry data; geophysics field data collection and analysis; preliminary technical analysis and maps of groundwater systems; construction of hydrogeologic cross sections; construction of maps of pollution sensitivity; preparation of final atlas report and publication, training of local atlas users, and dissemination of data.

This project will utilize and extend work begun under a previous projects to assemble the published county atlas groundwater maps into geospatial data layers for use in decision-support systems. These systems include DNR's new electronic permitting process and DNR's on-line web-based applications such as Watershed Assessment Tool. These assembled data layers and electronic tools make the information more accessible for local, regional, and state decision makers.

This project will also incorporate work under previous projects to identfy springsheds and incorporate the results of that work in Winona and Houston counties for the preparation of Part B atlases, including karst system plates for each of the county atlas reports.

III. OVERALL PROJECT STATUS UPDATES:

AMENDMENT REQUEST August 5, 2015

The budget has been modified to comply with LCCMR direction regarding project direct and necessary expense. To do so, $83,490 of Division direct expense was subtracted from the budget line for "Direct support services". That change leaves a balance in that line of the allowed $101,252 for Direct support services. The entire amount of $83,490 was added to a new budget line under Professional Technical Service contracts for a proposed contract with Minnesota Department of Health for part of our chemistry analysis of groundwater samples for the project. The project manager is considering using the MDH lab at greater cost because the lab results are provided fully post-processed and in a finished format that can be seamlessly added to an existing multi-agency database. The MDH lab contract at greater cost was not considered at the time the original project proposal was developed in 2014. The work plan has been modified consistent with the changes noted above.

Approved by the LCCMR 8-12-2015.

AMENDMENT REQUEST 02/08/2016 Approved February 23, 2016

We request changing the project manager from Jan Falteisek to Jim Berg since Jan has retired from the DNR.

Project Status as of: January 15, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.

See LCCMR 2013 project update for details.

Project Status as of: July 20, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Project Status as of: January 11, 2017 (financial report as of January 3, 2017)

Sample collection

- DNR staff collected groundwater samples from Houston, Winona, Morrison and Meeker counties for a total of approximately 280 samples. Samples were processed and submitted to the laboratories at the Minnesota Department of Agriculture and the University of Waterloo for analysis.
- Some preparation work for the next field season has been initiated for Kanabec and Washington counties including map/cross section preparation and collection of existing chemistry data.

Report preparation

- A new template was created for report preparation to improve efficiency and the time required to complete reports.
- Nicollet, Sibley, Anoka, and Renville county reports and graphics were edited and assembled into final form or near final form.

Project Status as of: July 15, 2017 (financial report as of July 10, 2017)

Sample collection

- Washington and Redwood County water sample collection field work was completed in May and June of 2017 and samples were submitted to laboratories for analysis.

Report preparation

- Printed Nicollet County Geologic Atlas on Dec 12, 2016 and the Anoka and Sibley County Geologic Atlases Jan 31, 2017.
- Final versions of the Renville and Sherburne CGAs were completed.

AMENDMENT REQUEST July 21, 2017 Amendment Approved: 07/26/2017

We request an increase in the Professional/Technical/Service Contracts category (laboratory services) from $311,490 to $382,000. That increase in costs for laboratory services will be balanced by a decrease in the Personnel category of $1,423,098 to $1,352,588. The cost increase in the laboratory services budget is due to the switch from the University of Minnesota laboratory for general chemistry constituents and trace elements to the Minnesota Department of Agriculture (MDA). The MDA lab was chosen over the University lab because MDA is able to deliver data in a common format that will be used by all state agencies. This common format should allow all of the data from the lab to be delivered directly to a common State of Minnesota database for more efficient database entry, greater quality, and more efficient collaboration among the agencies.

Project Status as of: January 12, 2018

Sample collection and other field work

- Brown and Kanabec County water sample collection field work was completed. Washington chemistry reports were compiled and mailed to well owners in November.
- Conducted Geophysics field work in Aitkin, Cass and St. Louis Counties

Report preparation and workshops

- Preparation of maps, cross sections, and other figures for Houston, Winona, Meeker, Brown, Washington, Redwood and Morrison counties. Drafts of the Wright and Clay County reports were

completed and prepared for publication. The Sherburne and Renville County atlases were published in October and November, respectively, and workshops were completed.

AMENDMENT REQUEST January 12, 2018 Amendment Approved: May 30, 2018

We are requesting an amendment that increases the chemistry budget by $113,000 which will allow us to cover all the chemistry lab costs for the 4 new counties that we will start in 2018 (Wadena, Becker, Cass and Isanti). Previously only two of those counties were covered in the budget. This will allow us to encumber all the funds needed for the entire upcoming field season. In addition, this requested increase will cover the costs for the carbon 14 residence time sampling and analysis for the four counties that we started in 2017 (Washington, Redwood, Brown, and Kanabec). A corresponding decrease in the salary budget of 113,000 is requested to balance the budget for these requested increases.

Since a substantial amount of this funding will not be used prior to the project end date (June 30, 2018) we request that the remaining funds be reapproved by statute for one additional year.

Project Status as of: July 13, 2018

Sample collection and other field work

- Completed well sampling for general chemistry and isotopes for Wadena and Becker Counties (200 samples) and Carbon 14 sampling for Washington, Redwood, Brown, and Kanabec (40 samples). Preparations for sampling Isanti and Cass Counties were initiated in June 2018.

Report preparation and workshops

- Report figures and text creation and for Houston, Winona, Morrison, Meeker, Brown, Washington, Redwood and Morrison counties is progressing. A draft version of the Wright CGA report was sent to reviewers in January 2018. The Wright County CGA was printed in April 2018. https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/wrigcga.html A draft version of the Clay CGA report was sent to reviewers on 4/4/2018. The final edits were completed in June 2018 and preparations have been made for printing.

With this ENRTF funding University of Minnesota researchers (Dr. Calvin Alexander and Scott Alexander) created a report describing their technique of using carbon isotope data to approximate residence times of groundwater samples that have been used in these CGA reports. DNR staff helped review versions of these reports. The final version of this report is in progress.

AMENDMENT REQUEST October 8, 2018 Amendment Approved October 17, 2018

We are requesting to transfer all remaining budget from non-salary budget items (e.g. laboratory, travel, etc.) into personnel wages and benefits. We have reset non-salary budgets to be equal to the amount spent, leaving a zero balance in each of those budget items. The move will help allow DNR to keep staff working on the production of the atlases through the end of fiscal year 2019. The need to make this amendment request and budgetary change is a result of the unexpected loss of ENRTF support for fiscal year 2019, and the resulting shortfall in our budget. Therefore, we request the following changes to the budget:

	Budget	Revised budget
Salary	$1,239,588	$1,496,226
Professional services contracts		
Laboratory analysis, isotopes	$87,000	$43,960
Laboratory analysis, carbon 14	$55,000	$0
Laboratory analysis, general/trace	$353,000	$287,513

Equipment	$42,000	$25,887
Printing	$55,000	$34,781
Travel	$43,000	$38,738
Other	$24,160	$8,383
Other, direct support services	$101,252	$64,511

Project Status as of: January 15, 2019

AMENDMENT REQUEST January 18, 2019 **Amendment Approved February 5, 2019**

The direct and necessary charges for the final fiscal year of this project (FY2019) were inadvertently left out of the previous amendment request. Therefore, we request the following changes to the budget:

	Budget	Revised budget
Salary	$1,496,227	$1,459,496
Other, direct support services	$64,511	$101,252

Project Status as of: June 30, 2019

Sample collection and other field work

- Completed well sampling for general chemistry and isotopes for Hubbard and Hennepin Counties (200 samples) and Carbon 14 sampling for Wadena, Becker, Isanti, and Cass counties (40 samples). Preparations for sampling Dodge and Olmsted Counties were initiated in May 2019.

Report preparation and workshops

- Report figures and text creation and for Houston, Winona, Morrison, Meeker, Brown, Redwood, and Morrison counties is progressing. The Washington County Groundwater atlas (Part B) was printed in March 2019: https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/washcga.html
- Workshops for the Clay and Washington Part B CGAs were held on 3/27/19 and 5/1/19, respectfully. In addition, a half-day field trip in Washington County was led by staff from MGS and DNR on June 5, 2019.

Overall Project Outcomes and Results:

County groundwater atlases (County Geologic Atlas, Part B) provide information about groundwater to help citizens and organizations improve sustainable management of groundwater resources. Delineated and mapped aquifers, recharge areas, and springsheds are essential information to help guide management decisions.

The county groundwater atlases describe the hydrogeologic setting, water levels, chemistry, pollution sensitivity, and groundwater use in a county. It includes selected hydrogeologic cross sections indicating groundwater flow direction, residence time within aquifers and groundwater-surface water interactions.

Completed county groundwater atlases that were partially funded by this funding include the counties listed below. Some key conclusions include:

Anoka and Sherburne, and Washington counties

The surficial and upper two to four buried sand aquifers (Anoka; Sherburne and Washington, respectively) are relatively sensitive to pollution. The lower buried sand aquifers and the top of bedrock (Anoka and Sherburne) have large areas that generally appear to be well protected. Elevated chloride and nitrate concentrations in groundwater were found throughout these counties. Elevated

concentrations of naturally occurring manganese were detected in more than half of the samples in Anoka and Sherburne.

Nicollet, Sibley, Renville, Wright, and Clay counties
The pollution sensitivity ratings of the surficial and upper one to three buried sand aquifers (Nicollet, Sibley, and Renville; Wright and Clay, respectively) are relatively sensitive to pollution. The deeper aquifers have mostly lower pollution sensitivity ratings across the interior of the counties with higher sensitivity ratings in the Minnesota and Mississippi river valleys. Arsenic and manganese are naturally occurring elements of concern that are present in groundwater across these counties.

In Clay County, chemical analysis of groundwater samples indicates groundwater from buried aquifers in the western portion is some of the oldest and most isolated in the state. In Wright and Washington counties, chemical and other evidence shows lake and groundwater connections are common. Future atlases partially funded by this project include: Becker, Brown, Cass, Dodge, Hennepin, Houston, Hubbard, Isanti, Kanabec Meeker, Morrison, Olmsted, Redwood, Wadena, and Winona.

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: County Geologic Atlas, Part B
Description: Building on Part A atlas data, compile field chemistry, analyze groundwater samples for natural chemistry and age-dating isotopes, and assemble aquifer characteristics data. Prepare groundwater maps, cross sections, and interpretations of pollution sensitivity for publication in completed Part B atlas reports. Continue or begin new Part B projects.

Summary Budget Information for Activity 1:

ENRTF Budget:	**$ 2,000,000**
Amount Spent:	**$2,000,000**
	$0

Outcome	Completion Date
1. Publish completed Part B reports (up to three): Publish reports underway at the start of the project period, including Anoka, Nicollet, Sibley, Wright, Sherburne; continue Part B projects (up to four), including, Winona, Houston, Renville, and Clay; if possible start new Part B projects (up to two): Morrison, Redwood, Meeker, Brown. Includes contract services for laboratory analysis of water samples. Part B Atlas program personnel supported by the General Fund base program may be assigned to one or more of these projects or may work on specific components of projects so funds from both General Fund and ENTRF will be used to complete these atlases. Part B Atlas program personnel supported by CWF funds during FY 16 may be assigned to one or more of these projects or may work on specific components of project so funds from both CWF and ENRTF will be used to complete atlases.	June 30, 2019

Activity Status as of: January 15, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Activity Status as of: July 20, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Activity Status as of: January 11, 2017 (financial report as of January 3, 2017)

Sample collection

- DNR staff collected groundwater samples from Houston, Winona, Morrison and Meeker counties for a total of approximately 280 samples. Samples were processed and submitted to the laboratories at the Minnesota Department of Agriculture and the University of Waterloo for analysis.
- Some preparation work for the next field season has been initiated for Kanabec and Washington counties including map/cross section preparation and collection of existing chemistry data.

Report preparation

- A new template was created for report preparation to improve efficiency and the time required to complete reports.
- Nicollet, Sibley, Anoka, and Renville county reports and graphics were edited and assembled into final form or near final form.

Activity Status as of: July 15, 2017

Sample collection

- Completed Washington and Redwood County postcard printing (asking landowners to allow us to sample wells), letters, and news releases.
- Washington and Redwood County water sample collection field work was completed in May and June of 2017 and samples were submitted to laboratories for analysis.

Report preparation

- Printed Nicollet County Geologic Atlas on Dec 12, 2016 and the Anoka and Sibley County Geologic Atlases Jan 31, 2017.
  https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/nicocga.html
  https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/anokcga.html
  https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/siblcga.html

- A more user friendly water chemistry report that we send to well owners was completed.
- A final draft of the Renville and Sherburne CGAs were completed.
- GIS staff created base maps of Cook, Pennington, Dakota, and Steele County to be sent to MGS.

Activity Status as of: January 15, 2018

Sample collection and other field work

- Brown and Kanabec County water sample collection field work was completed in August and October of 2017 and samples were submitted to laboratories for analysis. Washington chemistry reports were compiled and mailed to well owners in November.
- Conducted Geophysics field work in Aitkin, Cass and St. Louis Counties

Report preparation and workshops

- The Sherburne and Renville County atlases were published in October and November, respectively, and workshops with county and other local staff was held on October 26, and November 7, respectively.
  https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/shercga.html

  https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/renvcga.html

- Preparation of maps, cross sections, and other figures for Houston, Winona, Meeker, Brown, Washington, Redwood and Morrison counties. Drafts of the Wright and Clay County reports were completed and prepared for publication.

Activity Status as of: July 13, 2018

Sample collection and other field work

- Completed well sampling for general chemistry and isotopes for Wadena and Becker Counties (200 samples) and Carbon 14 sampling for Washington, Redwood, Brown, and Kanabec (40 samples). Preparations for sampling Isanti and Cass Counties were initiated in June.

Report preparation and workshops

- Report figures and text creation and for Houston, Winona, Morrison, Meeker, Brown, Washington, Redwood and Morrison counties is progressing. A draft version of the Wright CGA report was sent to reviewers in January 2018. The Wright County CGA was printed in April 2018. https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/wrigcga.html

- A draft version of the Clay CGA report was sent to reviewers on 4/4/2018. The final edits were completed in June 2018 and preparations have been made for printing.

- With this ENRTF funding University of Minnesota researchers (Dr. Calvin Alexander and Scott Alexander) created a report describing their technique of using carbon isotope data to approximate residence times of groundwater samples that have been used in these CGA reports. DNR staff helped review versions of these reports. The final version of this report is in progress.

Activity Status as of: January 15, 2019

Sample collection and other field work

- Completed groundwater sampling (200 samples) in Isanti and Cass Counties (July -September 2018). Wadena, Becker and Isanti County chemistry reports were compiled and mailed to well owners in November and December 2018.
- Seismic surveys were completed in St. Louis County (July 2018).

Report preparation and workshops

- Continued working on report figures and text for Morrison, Redwood, Brown, Houston, Winona, Washington, and Meeker counties.
- Wright County Part B Workshop (Buffalo, MN) in November 2018.
- The Clay CGA was completed and printed (July 2018).
- A draft version of the Washington CGA was evaluated by reviewers in preparation for publication in early 2019.

Project Status as of: June 30, 2019

Sample collection and other field work

- Completed well sampling for general chemistry and isotopes for Hubbard and Hennepin Counties (200 samples) and Carbon 14 sampling for Wadena, Becker, Isanti, and Cass counties (40 samples). Preparations for sampling Dodge and Olmsted Counties were initiated in May 2019.

Report preparation and workshops

- Report figures and text creation and for Houston, Winona, Morrison, Meeker, Brown, Redwood, and Morrison counties is progressing. The Washington County Groundwater atlas (Part B) was printed in March 2019: https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/washcga.html
- Workshops for the Clay and Washington Part B CGAs were held on 3/27/19 and 5/1/19, respectfully. In addition, a half-day field trip was led by staff from MGS and DNR on June 5, 2019.

Final Report Summary:

Completed county groundwater atlases that were partially funded by this funding include: Anoka (2016), Nicollet (2016), Sibley (2017), Renville (2017), Sherburne (2017), Clay (2018), Wright (2018), and Washington (2019). Some key conclusions from each atlas (significant outcomes) include the following:

Anoka and Sherburne Counties
The surficial and upper two to four buried sand aquifers are relatively sensitive to pollution. The lower four buried sand aquifers and the top of bedrock have large areas that generally appear to be well protected. Chloride was a significant contaminant in groundwater from both counties, with 34 percent (Anoka) and 86 percent (Sherburne) apparently from anthropogenic chloride sources such as road and water softener salt. Nitrates above background concentrations of 1 ppm were detected in 30 percent of the groundwater samples in Sherburne County but only 5 percent of samples in Anoka County. Natural manganese concentrations that exceeded the lower health risk limits were found in a large proportion of groundwater samples (68 percent) in both counties indicating a natural water quality issue for the majority of well owners.

Nicollet, Sibley, and Renville counties
The surficial sand and gravel aquifer is not extensive and not widely used as a water resource. The pollution sensitivity ratings of the upper buried sand aquifer are higher compared to the other aquifers in the county because they are located closer to the land surface. The deeper aquifers have very low pollution sensitivity ratings across the interior of the county with higher sensitivity ratings in the Minnesota River valley. Both arsenic and manganese are naturally occurring elements of concern that are present in groundwater across the county. Natural arsenic concentrations greater than or equal to 10 ppb were found in 17 percent (Nicollet), 25 percent (Renville), and 38 percent (Sibley) of the water samples. Natural manganese concentrations that exceeded the lower health risk limit were found in 53 percent (Renville), 59 percent (Sibley), and 79 percent (Nicollet) of the samples analyzed for manganese.

Clay County
The surficial and upper three buried sand aquifers are relatively sensitive to pollution. The underlying buried sand aquifers and aquifer groups typically have very low pollution sensitivity conditions. Exceptions include some eastern portions of three the aquifer groups. Both arsenic and manganese are naturally occurring elements of concern that are present in groundwater across the county. Natural arsenic concentrations greater than or equal to 10 ppb were found in 56 percent of the groundwater samples. Natural manganese concentrations that exceeded the lower health risk limit were found in 59 percent of the groundwater samples. Stable isotopes of oxygen and hydrogen and radioactive isotopes (tritium and carbon-14) indicate that the groundwater from buried aquifers in the western portion is some of the oldest and most isolated in the state.

Wright County
Pollution sensitivity of aquifers varied widely throughout the county dependent on the depth of the aquifer and the overlying geologic materials. In general, the upper three buried aquifers located close to the land surface have higher sensitivities than those located at greater depths. The pollution sensitivity of the bedrock surface is mostly very low, but has areas that are rated high to very high in small areas located near river valleys. Elevated

levels of nitrate and chloride and recent tritium-age waters were present in the northern portions of the county. Elevated levels of naturally occurring arsenic and manganese are common in the county. For samples analyzed for arsenic, 49 percent exceeded 10 ppb. Natural manganese concentrations that exceeded the lower health risk limit were found in 55 percent of the groundwater samples. In this county with abundant lakes, evidence of surface water recharge from lakes and wetlands to aquifers was found at 16 locations based on stable isotope analysis.

Washington County
The highly variable geology of Washington County results in pollution sensitivity ratings that range from very low to very high for the multiple buried sand aquifers that were mapped in the county. The stratigraphically lower aquifers with higher sensitivity areas tend to be in the east and southeast. The pollution sensitivity of the bedrock aquifers varies widely across the county. The northwestern part has typically very low pollution sensitivity; the St. Croix moraine area (central portion) is a complex mosaic of very low to very high pollution sensitivity; and the St. Croix River valley and the southern part of the county commonly have extensive areas of very high sensitivity because of thin and/or sandy overlying unconsolidated sediment. Chloride is a significant contaminant and is relatively widespread across the county in most of the aquifers with 65 percent of the groundwater samples at elevated concentrations. Nitrate was found relatively widespread across the county in both urban and rural settings with 36 percent of the samples above background concentrations. Surface-water connections to groundwater were detected in the northeastern and central portions of the county from a relatively large number (33) of groundwater samples.

Atlases partially funded by this project with plans to complete after June 30, 2019, include: Becker, Brown, Cass, Dodge, Hennepin, Houston, Hubbard, Isanti, Kanabec, Meeker, Morrison, Redwood, Wadena, and Winona counties.

V. DISSEMINATION:
Description: Each completed county geologic atlas, Part B (groundwater) is printed in paper format and distributed to county, libraries, state agencies, and other organizations. They are available for sale at the MGS. PDF versions of the report are posted to the DNR web site and are available through http://www.dnr.state.mn.us/waters/groundwater_section/mapping/status.html. Project data, including water chemistry data and GIS data are also posted to the DNR web site. Following publication of each groundwater report (Part B), a local workshop is held to introduce the report content and train users in its application. Typical attendees include county environmental and planning staff, SWCD staff, county commissioners, representatives of local governments, local DNR staff, citizens and others.

Status as of: January 15, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Status as of: July 20, 2016
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Status as of: January 15, 2017
County Geologic Atlas Part B projects proceeded using existing LCCMR 2013 funds.
See LCCMR 2013 project update for details.

Status as of: July 15, 2017
We created a technical article for the Minnesota Groundwater Association (MGWA) for Anoka/Nicollet/Sibley CGAs that was published in the March 2017 issue of the MGWA newsletter.

Status as of: January 15, 2018
The Sherburne and Renville County atlases were published in October and November. Atlas staff made presentations for both Boards of County Commissioners and completed workshops for local stakeholders.

As part of atlas completion, publication is announced in a news release, GovDelivery followers are notified, and copies are sent the LCCMR Legislative Reference Library. An article about the Renville County, Part B atlas was in the December 2017 Minnesota Groundwater Association newsletter.

Status as of: July 13, 2018
Sherburne and Wright County Geologic Atlas articles were created for the MGWA newsletter. These Sherburne and Wright articles appeared in the March and June 2018 issues, respectively. The Wright County CGA was printed in April 2018. https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/wrigcga.html. As part of atlas completion, publication is announced in a news release, GovDelivery followers (approximately 3000 individuals) are notified, and copies are sent the LCCMR Legislative Reference Library. Copies of the atlas are mailed to other interested stakeholders including USGS, local libraries, and state agencies.

DNR has been working with the Washington County staff and a consultant who was hired to create a septic system risk map for the county. We supplied draft GIS files for the pollution sensitivity of near surface materials map; all the buried aquifer pollution sensitivity; and water table depth and elevation; and a Quaternary stratigraphic column figure.

In February Jim Berg provided atlas training to DNR staff in the monitoring and survey section.

In March 2018 Paul Putzier presented a groundwater training session with Benton & Mille Lacs County SWCD in Foley, Minnesota, a presentation about CGA at Foley High School Environmental Science Class, and a presentation to University of St. Thomas Environmental Science class.

Vanessa Baratta presented an introduction to the atlas program at the March MPCA Water Issues seminar. The seminar was carried live to most MPCA offices.

Dale Setterholm and Paul Putzier provided an atlas program update to the Clean Water Council in March.

In April, DNR atlas staff participated in the MGS Atlas Part A presentation for Isanti County.

The Legislative Water Commission hear an update on the atlas program from Dale Setterholm and Paul Putzier at the April 3 meeting.

In May atlas staff from MGS and DNR participated in a knowledge sharing field trip in SE Minnesota with the staff from the Wisconsin Geological and Natural History Survey and Wisconsin based USGS staff.

Dale Setterholm, MGS staff and Paul Putzier participated in a presentation to the Yellow Medicine County Board of County Commissioners.

Throughout the reporting period, DNR received feedback from stakeholders on applications and uses of the County Geologic Atlas. Individuals providing feedback included Rick Jolley (MPCA), Jim Almendinger (Minnesota Science Museum), Rob Vix (Well Driller), Ray Wuolo (Vice President of Barr Engineering), Rich Soule and Steve Robertson (both of the Minnesota Department of Health) and others.

Status as of: January 15, 2019

Jim Berg wrote an article regarding the Clay County atlas for the MGWA newsletter (July 2018).

Vanessa Barratta made a groundwater presentation at the state fair (August 2018).

Jim Berg attended a state conference of township supervisors and staff in Duluth (November 2018) and talked to attendees about the atlases at a “round table”.

Jim Berg gave a presentation to a group of local units of government staff in Osakis regarding groundwater of the Sauk River watershed and County Geologic Atlases (November 2018).

DNR sent a notice of Hubbard County Geologic Atlas (Part A) completion (September 2018), and upcoming groundwater sampling for Part B in other counties, to GovDelivery listserve of approximately 3,000 email addresses.

DNR sent a notice of Clay County Groundwater Atlas (Part B) completion (August 2018) to GovDelivery listserve of approximately 3,000 email addresses.

Jim Berg met with staff from Washington County to begin planning for the workshop and fieldtrip at the completion of the groundwater atlas.

Paul Putzier presented to the Clay County Board of County Commissioners (December 2018) on the completion of the groundwater atlas.

DNR completed the atlas workshop for Wright County (September 2018).

Status as of: June 30, 2019

Vanessa Baratta delivered presentation about the atlas program at statewide first responders meeting in Baxter, MN (February 2019).
Jim Berg wrote an article about the Washington County groundwater atlas for the MGWA newsletter and presented a Clay County atlas workshop in Moorhead (March 2019).

Paul Putzier attended county geologic atlas Part A presentations in Hubbard and Cass counties (March 2019) to describe their upcoming Part B atlases.

The Washington County Board of Commissioners was given a brief presentation about the Washington County groundwater atlas (April 2019).

A Washington County groundwater atlas workshop was held in Stillwater (May 2019) followed by a field trip (June 2019) for local government staff and other interested people. The Washington County atlas was announced via GovDelivery and copies were sent to a select group of users and libraries.

A meeting with Olmsted and Dodge County local government staff was held in Rochester (May 2019) to describe the program and start gathering existing groundwater data.

April 22 – Hennepin Part A presentation. DNR presented on upcoming Part B work.

May 1 – Washington CGA Workshop and Field Trip

April 16 – Washington County Board of County Commissioners Presentation

May 10 – Children’s Water Festival, Ruth

May 11 – Cannon River File Water Festival, Ruth

May 23 – Olmsted County CGA Meeting – John
June 5 – Washington County Field Trip

June 6 – GovDelivery Kandiyohi Part A, 2019 Sampling Part B
June 13 – Dodge News release on GW sampling
June 13 – Wisconsin Task Force on Water Quality. Presented on Minnesota Atlas Program to state elected officials.
June 17 – Douglas County Board with MGS

May 30 – Karst Training for Region 3. LeRoy area by Green

Final Report Summary:
We created and presented educational workshops for all of the groundwater atlases that were completed during this funding period. Shorter presentations were also provided to the County Board of Commissioners for most of the completed Part B counties. Short presentations about the DNR part of the atlas program were made to county and other local staff during the completed Part A presentations. Other atlas related presentations included the Benton & Mille Lacs County SWCD, MPCA and non-atlas DNR staff, the Legislative Water Commission, and a state conference of township supervisors.

Technical articles for the Minnesota Groundwater Association (MGWA) for the completed atlases were published in issues of the MGWA newsletter (http://www.mgwa.org/news_letter/newsletter-back-issues/). Public notification of these completions was also provided through GovDelivery. Paper copies were sent out to the LCCMR Legislative Reference Library. Copies of the atlas are mailed to other interested stakeholders including USGS, local libraries, and state agencies.

VI. PROJECT BUDGET SUMMARY:
A. ENRTF Budget Overview:

Budget Category	$ Amount	Overview Explanation
Personnel:	$1,459,486	Continuation of eleven existing staff (10.25 FTE). Note that in the first year of the project (FY16) some positions will be funded by remaining existing ENTRF or CWF appropriations for atlas Part B acceleration or a position may be temporarily vacant during the project period. Hydrologist Supervisor (classified), Project Manager/Technical Supervisor: $107,000 (75% salary, 25% benefits); 0.5 FTE || Res Sci 3 (classified) technical team lead: $118,000 (68% salary, 32% benefits); 1 FTE || Hydrologist 3 (classified): $112,000 (68% salary, 32% benefits); 1 FTE || Hydrologist 3 (classified) science reports team lead: $112,000 (68% salary, 32% benefits); 1 FTE ||(three) Hydrologist 2 (unclassified or classified): $88,000 (75% salary,25% benefits); 1 FTE ea.|| Information Officer 2 (editor) (classified or unclassified): $54,000 (75% salary, 25% benefits); 1 FTE || Research Analyst - GIS or Research Analyst Int. - GIS (classified or

		unclassified): $60,000 (75% salary, 25% benefits); 1 FTE || Hydrologist 1 (classified or unclassified) field hydrogeologist: $62,000 (75% salary, 25% benefits); 1 FTE. || Hydrologist 1 (temporary) field hydrologist: $46,000; 0.75 FTE ||
Professional/Technical/Service Contracts:	$331,473	Laboratory analysis of water samples. State master contract for isotope analysis and U of MN for carbon-14 dating, and Minnesota Department of Agriculture laboratory for general chemistry and trace elements.
Equipment/Tools/Supplies:	$25,887	Water sampling and measurement tools and field analytical meters and equipment (est $20,000). Supplies, including expendable water sampling supplies and safety items (est $22,000).
Direct and necessary services for the appropriation**	$101,252	Direct and necessary services for the appropriation; see detail below.
Printing:	$34,781	Printing six (6) reports (est $9,000 ea. Minncor contract); well owner sampling permission cards ($1000), (est total $55,000).
Travel Expenses in MN:	$38,738	In-state vehicle mileage (est $25,000) and travel expenses (est $18,000), primarily for water sample and field data collection.
Other:	$8,383	GIS and report publication specialty software purchase, upgrades, and license subscription agreements (est $3,600). Specialty project specific training such as GIS, primarily for new hires (est $5,000). Shipping water samples to laboratory (est $2,000). Repairs to project equipment (est $1,760). Project specific training expense including safety (est $8,800). Cell phones for exclusive use of 5 project specific field staff for safety (est $3,000).
TOTAL ENRTF BUDGET:	**$2,000,000**	

* Estimated amount per budget category; amounts may vary per category but total project budget will not exceed the Total ENRTF budget of $ 2,000,000.

** *Direct and Necessary expenses include both Department Support Services (Human Resources [~$22,874], IT Support [~$50,006], Safety [~$5,658], Financial Support [~$20,634], Communications Support [~$1,141], Planning Support [~$704], and Procurement Support [~$235]) and Division Support Services [~$83,490]. Department Support Services are described in the agency Service Level Agreement, and billed internally to divisions based on rates that have been developed for each area of service. These services are directly related to and necessary for the appropriation. Department leadership services (Commissioner's Office and Regional Directors) are not assessed. Division Support Services include costs associated with Division business offices and clerical support. Those elements of individual projects that put little or no demand on support services such as large single-source contracts, large land acquisitions, and funds that are passed-thru to other entities are not assessed Direct and Necessary costs for those activities. For this work plan, sole source chemistry contract with an associated cost of $311,490 have not been assessed Direct and Necessary costs."

Explanation of Use of Classified Staff:

Any classified position paid for with ENRTF funds will either be 1) backfilled with a new position or 2) the work previously done by this position will be delayed, eliminated, or completed by the start of the project. In anticipation of this work continuing into the future, new positions in this project will be created as classified due to the experienced difficulty in attracting high-quality candidates to fill the unclassified positions. The personnel plan in this work plan is modified to accommodate the option of hiring either unclassified or classified staff for three existing hydrologist 2 positions, two hydrologist 1 positions, the information officer, and the research analyst positions. The positions were originally created as unclassified positions. Allowing the option of reclassifying one or more of the positions as classified when a position vacancy occurs provides the most flexibility in hiring high-quality candidates who might not otherwise apply to a limited unclassified position.

There is one classified position currently working on this project to be paid partially by this grant. The hydrologist supervisor provides overall atlas program direction, on-going program management, and is the technical supervisor for staff assigned to specific atlas projects or who support the atlas program as GIS or report production specialists. A portion of the hydrologist supervisor's time (0.5 FTE) will be paid by this grant and the remaining portion will be paid by General Fund, subject to an approved DNR budget.

Explanation of Capital Expenditures Greater Than $5,000: none planned

Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation: 10.25 FTE

Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: N/A

B. Other Funds:

Source of Funds	$ Amount Proposed	$ Amount Spent	Use of Other Funds
Non-state			
In-kind Services During Project Period: County assistance to arrange sampling access and sponsor local training workshop	$5,000	$	County assists staff in local access to well owners and sponsors the training workshop at the conclusion of the project.
State			
Other State $ Being Applied to Project During Project Period: General Fund base program support, estimated $410,000 for the FY15 one-year project period to complete one, continue several, and possibly initiate an additional Part B atlas. Remaining from current ENRTF appropriations: M.L. 2013 Chp. 52, Sec. 2, Subd. 03c, $1,200,000 thru June 30, 2016	$2,240,000	$	General Fund base program support provides personnel, laboratory analysis and interpretation, printing, travel expenses, water sampling equipment and supplies, and related expenses. Personnel, laboratory analysis and interpretation, printing, travel expenses, water sampling equipment and supplies, and related expenses.

Remaining from current Clean Water Fund, M.L. 2013 Ch 137 Art 2 Sec 6 (h), $1,230,000 July 1, 2013 thru June 30, 2015.			Clean Water Funds specifically to support the acceleration and completion of county geologic atlases
TOTAL OTHER FUNDS:	**$2,245,000**	**$**	

VII. PROJECT STRATEGY:

See also Minnesota Geologic Survey County Geologic Atlas, Part A, Work Plan submitted separately to LCCMR.

A. Project Team/Partners:

The Minnesota Geological Survey completes Part A of county geologic atlases (see MGS Main proposal for county atlas continuation). To determine priority, the MGS requires that the counties participate either with funding or with in-kind services and also considers groundwater sensitivity, resource demand, and the size of the population served. At the completion of the Part A work, DNR completes Part B, the groundwater portion, of the atlases. DNR requests local government sponsorship for training workshops intended for local staff and the public held at the completion of a Part B atlas.

B. Project Impact and Long-term Strategy:

The County Geologic Atlas program is a primary vehicle to provide comprehensive geologic and hydrogeologic mapping and associated databases to conserve and protect grundwater resources. The long-term strategy is to complete these activities for all the counties in the state. The MGS receives funding from DNR and also leverages federal dollars from the National Cooperative Geologic Mapping Program of the USGS. The MGS competes annually for these federal cost-share dollars. MGS Part A atlas development is also supported by ENRTF and Clean Water Fund though direct appropriation. DNR is a cooperator and funding partner with the MGS. The Part B atlases are currently supported by a combination of state general fund, ENRTF, and Clean Water Fund appropriations to DNR. Springshed mapping and research to investigate and understand groundwater flow in complex geologic systems in southeast Minnesota has been supported by ENRTF; the results of that work will be utilized in any ongoing or future altas work in southeast Minnesota.

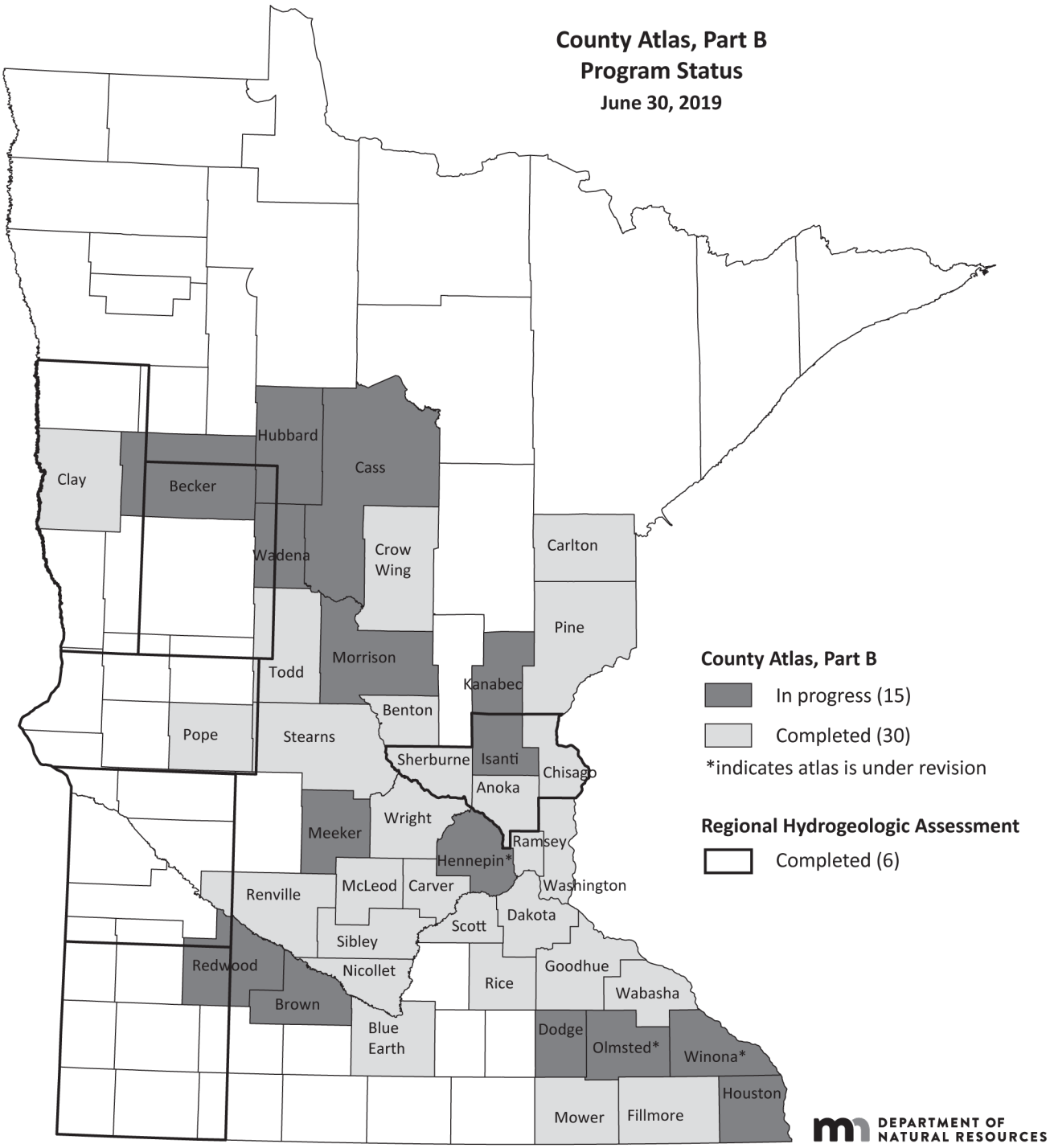
C. Funding History:

Funding Source and Use of Funds	Funding Timeframe	$ Amount
M.L. 2008 ENRTF (FY09-11) to DNR. Total appropriation was $1,600,000; a portion funded Phase 1 of the Mt. Simon aquifer investigation; $706,000 appropriated directly to MGS for atlas continuation. Subd. 4(h) $861,000 Mt. Simon aquifer	FY 2009--2010	$ Subd. 4(h) $861,000 Mt. Simon aquifer
M.L. 2009 (Part B atlas) ENRTF to DNR. Total appropriation was $2,695,000; a portion funded DNR county atlas continuation; a portion funded Phase 2 of the Mt. Simon aquifer investigation; $820,000 appropriated directly to MGS for atlas continuation.	FY 2010--2011	$ Subd. 3(b) $890,000 county atlas continuation $895,000 Mt. Simon aquifer.
M.L. 2011 Subd. 03b2 (Part B atlas) ENRTF to DNR for atlas continuation	FY 2012--2014	$600,000

M.L. 2013 (Part B atlas) ENRTF to DNR for atlas continuation	FY 2014--2017	$1,200,000
M.L. 2009 – CWF – expand atlas data acquisition	FY2010--2014	$1,000,000
M.L. 2013 -- CWF – (Part B atlas continuation and acceleration)	FY2014--2018	$1,230,000

VIII. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS: N/A

IX. VISUAL COMPONENT or MAP(S):



X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted no later than January 15, 2016, July 15, 2016, January 15, 2017, and July 15, 2017, January 15, 2018. A final report and associated products will be submitted between June 30 and September 15, 2019.

Environment and Natural Resources Trust Fund
M.L. 2015 Project Budget Final Report

Project Title: County Geologic Atlases – Part B
Legal Citation: *M.L. 2015 Ch 76, Sec 2, Subd 3b, as extended by laws M.L. 2018, Chp. 214, Art. 4, Sec. 2, Subd. 20*
Project Manager: Jim Berg
Organization: Minnesota Department of Natural Resources
M.L. 2015 ENRTF Appropriation: $ 2,000,000
Project Length and Completion Date: 4 years (completion date: June 30, 2019)
Date of Report: July 17, 2019

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Activity 1 Budget	Amount Spent	Activity 1 Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM						
Personnel (Wages and Benefits) -- **Continuation of eleven existing staff (10.25 FTE). Note that in the first year of the project (FY16) some positions will be funded by remaining existing ENTRF or CWF appropriations for atlas Part B acceleration.**		$1,459,486	$1,459,486	$0	$1,459,486	$0
Hydrologist Supervisor (classified), Project Manager/Technical Supervisor: $107,000 (75% salary, 25% benefits); 0.5 FTE						
Res Sci 3 (classified) technical team lead: $118,000 (68% salary, 32% benefits); 1 FTE						
Hydrologist 3 (classified): $112,000 (68% salary, 32% benefits); 1 FTE						
Hydrologist 3 (classified) science reports team lead: $112,000 (68% salary, 32% benefits); 1 FTE						
Three Hydrologist 2 (unclassified or classified): $88,000 (75% salary,25% benefits); 1 FTE ea						
Information Officer 2 (editor) (classified or unclassified): $54,000 (75% salary, 25% benefits); 1 FTE						
Research Analyst - GIS or Research Analyst Int. - GIS (classified or unclassified): $60,000 (75% salary, 25% benefits); 1 FTE						
Hydrologist 1 (classified or unclassified) field hydrogeologist: $62,000 (75% salary, 25% benefits); 1 FTE.						
Hydrologist 1 (temporary) field hydrologist: $46,000; 0.75 FT						
Professional/Technical/Service Contracts						
Laboratory analysis of water samples: State contract release L-368(5) for environmental isotope analysis, stable isotopes of oxygen, hydrogen; tritium		$43,960	$43,960	$0	$43,960	$0
Laboratory analysis of water samples: U of MN, Dept of Earth Sciences, contract for carbon-14 dating.		$0	$0	$0	$0	$0
Laboratory analysis of water samples: Minnesota Department of Agriculture laboratory contract for general chemistry or trace elements.		$287,513	$287,513	$0	$287,513	$0
Equipment/Tools/Supplies						
Water sampling and measurement tools and field analytical meters and equipment (est $20,000). Supplies, including expendable water sampling supplies and safety items (est $22,000).		$25,887	$25,887	$0	$25,887	$0
Printing						
Printing six (6) reports (est $9,000 ea. Minncor contract); well owner sampling permission cards ($1000), well owner lab report letters, (est total $55,000).		$34,781	$34,781	$0	$34,781	$0
Travel expenses in Minnesota						
In-state vehicle mileage (est $25,000) and travel expenses (est $18,000), primarily for water sample and field data collection.		$38,738	$38,738	$0	$38,738	$0
Other						
' GIS and report publication specialty software purchase, upgrades, and license subscription agreements (est $3,600). Specialty project specific training such as GIS, primarily for new hires (est $5,000). Shipping water samples to laboratory (est $2,000). Repairs to project equipment (est $1,760). Project specific training expense including safety (est $8,800). Cell phones for exclusive use of 5 project specific field staff for safety (est $3,000).		$8,383	$8,383	$0	$8,383	$0
' Direct support services. DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (~$22,874), Safety Support (~$5,658), Financial Support (~$20,634), Communication Support (~$1,141), IT Support (~$50,006), Planning Support (~$704), and Procurement Support (~$235), that are necessary to accomplishing funded programs/projects. Approved 8-12-2015		$101,252	$101,252	$0	$101,252	$0
COLUMN TOTAL		**$2,000,000**	**$2,000,000**	**$0**	**$2,000,000**	**$0**